International Labeling Programs

NCEI

NATIONAL CENTER FOR
ENVIRONMENTAL INNOVATION

NCEI's International Innovation and Best Practices Program

□ **Mission Statement**: To more fully realize the vast potential for researching, disseminating, and adapting international lessons learned in best practices, environmental policies, and innovation by NCEI, EPA, and its stakeholders

NCEI's International Innovation and Best Practices Program

- **Outcome:** Best practices, tools, or concepts from international innovations are routinely considered and used in managing environmental challenges

- **Activity:** Research innovation priority areas/projects that meet NCEI and customer goals

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Project Objectives

- Research labeling programs that demonstrate solid evidence of environmental results (i.e., evaluations, surveys)

- Examine how these programs have influenced behavior change

- Develop connections between the US and international community

- Identify common themes between various programs

Research Method

- ☐ Analyze EPA documents
- ☐ Examine academic reports
- ☐ Explore web-based information
- ☐ Contact labeling programs
- ☐ Review evaluations
- ☐ Methodological limitations

Labeling Programs

☐ **Goal**: Promote environmental improvement by encouraging consumers to choose products and services considered to be environmentally preferable

☐ Labeling programs differ in terms of:

  ■ Size, e.g. Green Mark or Flower

  ■ Sponsoring institution, e.g. non-profit or government

  ■ Range of products covered, e.g. 1 or 80

  ■ Number of products awarded label, e.g. Environmental Choice or Eco Label
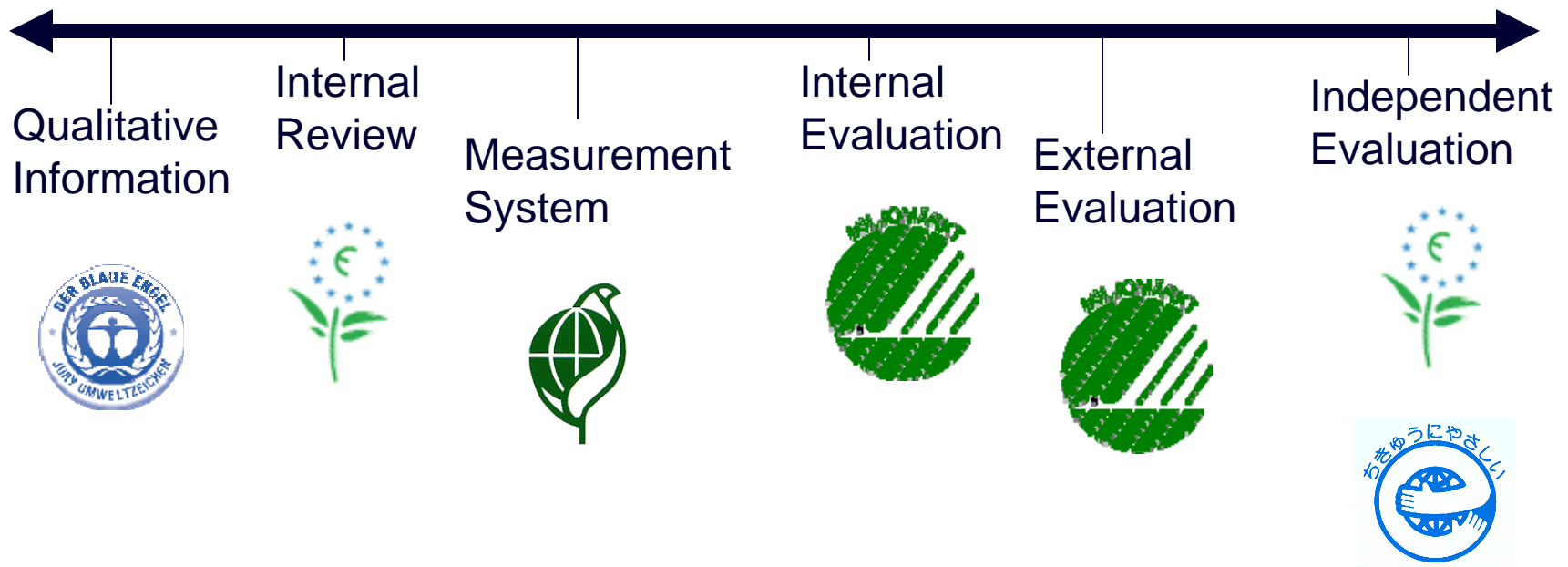
Background

	EU Flower	Germany, Blue Angel	Nordic Swan	Japan, Eco Mark	Taiwan, Green Mark
Introduced	1992	1977	1989	1989	1992
Overseeing Body	European Commission	German Institute for Quality Assurance and Certification	Nordic Council of Ministers	Japan Environment Association	Environment and Development Foundation
Product Categories	23	80	60	64	41
Products Awarded Label	350	3,700	1,200	5,176	451
GEN Member	X	X	X	X	

Type of Assessment

Qualitative
Information

Internal
Review

Measurement
System

Internal
Evaluation

External
Evaluation

Independent
Evaluation

Purpose of the Assessment

- **EU Flower**
  - Provide recommendations
  - Determine the direct and indirect benefits
  - Evaluate the performance and level of ambition
- **Blue Angel**
  - Enhance international policy learning
- **Nordic Swan**
  - Determine the effect on consumers' purchasing decisions
  - Analyze environmental effects
- **Eco Mark Japan**
  - Quantify the environmental effect
  - Determine the market share of products
- **Green Mark Taiwan**
  - Determine environmental benefits

Research Methods

- EU Flower
  - Literature review
  - Survey
  - Interviews
  - Review organizational documents
- Blue Angel
  - Review organizational documents
- Nordic Swan
  - Survey
  - Interviews

- Eco Mark Japan
  - Life cycle assessment (LCA)
  - Survey
  - Interviews
- Green Mark Taiwan
  - Collect manufacturing data

EU Flower: Background

Introduced	1992
Overseeing Body	European Commission
Product Categories	23
Products Awarded Label	350
Assessments (3)	☐ EVER Study 2005 ☐ Direct and Indirect Benefits 2004 ☐ EEB Evaluation 2004

EU Flower: EVER Study, 2005

- Research Method:
  - Review existing literature, studies, and surveys
  - Conduct interviews and direct case studies
- Findings:
  - Relative success in textiles, tissue paper, soil improvers, paints & varnishes, and growing media
  - 50% of product categories still show low applicant levels
  - Global EU market share is relatively small
- Recommendations:
  - Harmonization
  - Change institutions and framework

EU Flower: The Direct and Indirect Benefits of the European Eco Label, 2004

- Research Method:
  - Compared the environmental footprint of eco labeled products to their non labeled equivalents
  - Evaluated the differences in performance

- Findings:
  - Appreciable savings and benefits to the environment could be gained through the wider use of products meeting the labels standards

- Recommendations:
  - Build on eco labels progress and raise its profile
  - Concentrate on indirect benefits

Findings: *Direct* Benefits

Resource Saved / Avoided per Year	Amount Saved per Year by Scenario %		
	5% take up	20% take up	50% take up
Electricity, GWh	14,700	59,000	147,600
CO_2 produced from energy use, tonnes	9,318,000	37,270,000	93,175,000
Water Use, Megalitres	12,285,000	49,138,000	122,846,000
Reduced hazardous substance use, tonnes	13,800	55,400	138,400
Material savings, tonnes	530,700	2,122,700	5,306,700
Reduced discharges to water, tonnes COD	30,400	121,700	304,200
Reduced air pollution, tonnes	17,500	70,100	175,300

Findings: *Indirect* Benefits *Within* the EU

Item	Amount Saved per Year
Money	E 763 million
Energy saved	43 TWh
CO_2 saved	27 million tonnes
Water saved	35 Tera litres
Hazardous substances avoided	39 thousand tonnes
Materials saved	1.5 million tonnes
Reduced discharges to water	85 thousand tonnes COD
Reduced air pollution	49 thousand tonnes

Findings: *Indirect* Benefits *Outside* the EU

Item	Amount Saved Per Year
Energy saved	2.9 TWh
CO_2 saved	1.9 million tonnes
Water saved	2.5 Tera liters
Hazardous substances avoided	2.8 thousand tonnes
Materials saved	106 thousand tonnes
Reduced discharges to water	6 thousand tonnes COD
Reduced air pollution	3.5 thousand tonnes

EU Flower: EEB Evaluation of the European Eco Label Criteria and Scheme: What we wanted – what we got…2004

- ☐ Research Method:
  - ■ Focus on individual product criteria
  - ■ Analyze market dynamics
- ☐ Findings:
  - ■ Most successful product groups are textiles, paints and varnishes, followed by soil improvers and dishwashing detergents
  - ■ Direct environmental improvements were poor to mediocre in 77.5% of cases
- ☐ Recommendations:
  - ■ Operational: benchmarking exercises and develop methodology
  - ■ Policy: higher levels of ambition

EU Flower: SWOT Analysis

- [ ] Strengths
  - ▪ Recognizes the importance of evaluations – demonstrating environmental results

- [ ] Weaknesses
  - ▪ Competition from national eco labels
  - ▪ Procedural and organizational problems

- [ ] Opportunities
  - ▪ Explore how to build upon indirect benefits

- [ ] Threats
  - ▪ High costs to obtain the label
  - ▪ Difficult to involve and to get documentation from suppliers
  - ▪ Short product lifecycles

Blue Angel: Background

Introduced	1977
Overseeing Body	German Institute for Quality Assurance and Certification
Product Categories	80
Products Awarded Label	3,700
Assessment	Lessons Learned from the German Blue Angel Program, 2002

Blue Angel: Lessons Learned from the German Blue Angel Program, 2002

- ☐ Research Method:
  - ■ Review organizational documents
- ☐ Findings:
  - ■ Successful implementation of environmental labels is much more demanding than generally thought
  - ■ Ecological effectiveness and usefulness depends on the nature of the product category
  - ■ Environmental labeling can accelerate the diffusion of innovative product features
- ☐ Recommendations:
  - ■ Broaden criteria for eco labeled products

Blue Angel: SWOT Analysis

- Strengths
  - Positive media attention
  - Active involvement of key stakeholders
- Weaknesses
  - Difficult for day-to-day products to enter the market
- Opportunities
  - Increase innovation by broadening criteria
  - Assess policy measures more effectively
- Threats
  - Decline in willingness of consumers to pay more

Nordic Swan: Background

Introduced	1989
Overseeing Body	Nordic Council of Ministers
Product Categories	60
Products Awarded Label	1,200
Assessments (2)	☐ Effect of Nordic Swan Label on Consumers' Choice 2002 ☐ Evaluation of Environmental Effects 2002

Nordic Swan: The Effect of the Nordic Swan Label on Consumer Choice, 2002

- ☐ Research Method:
  - ■ Observed 1,596 Danish households weekly from 1997–2001
  - ■ Quantified the label's effect on consumers' choices among toilet paper, paper towels, and detergents
- ☐ Findings:
  - ■ Label has had a significant effect on brand choices for toilet paper and detergents but less of an effect for paper towels
- ☐ Recommendations:
  - ■ Confidence in the organization that certifies the label
  - ■ Media attention
  - ■ Acceptance of policies that have environmental goals

Nordic Swan: Evaluation of the Environmental Effects of the Swan

- ☐ Research Method:
  - ■ Evaluated three previous studies
  - ■ Held meetings with the studies authors
  - ■ Collected supplemental information
- ☐ Findings:
  - ■ In Sweden, 11% reduction of sulphur emissions, 21% reduction of COD emissions and 51% reduction of AOX emissions
  - ■ In Sweden, labeled laundry detergents reduced the amount of LAS being released to the environment by 2,400 tons, phosphates by 4,000 tons and optical whiteners by 40 tons
- ☐ Recommendations:
  - ■ Establish measures to enhance market acceptance
  - ■ Engage retailers in the eco label process

Nordic Swan: SWOT Analysis

- ☐ Strengths
  - ◼ Administrative structure
- ☐ Weaknesses
  - ◼ Difficult to influence environmental impacts
- ☐ Opportunities
  - ◼ Partnership with EU
- ☐ Threats
  - ◼ Low degree of market acceptance
  - ◼ Technology lock in

Eco Mark: Background

Introduced	1989
Overseeing Body	Japan Environment Association (JEA)
Product Categories	64
Products Awarded Label	5,176
Assessments (3)	☐ Environmental Burden Reduction 2005 ☐ Market Share Survey 2005 ☐ Market Share Survey 2002

Eco Mark: Survey Reports on the Effects on Environmental Burden Reduction, 2005

- ☐ Research Method:
  - ■ Quantify the environmental effect of five Eco Mark certified stationery products
  - ■ Conducted a survey to estimate the volume of environmental burden reduction
- ☐ Findings:
  - ■ Significant reductions in CO_2 emissions

Findings: Environmental Benefits

Eco Mark

Plastic Products	Reduction of CO_2 Emission
Ballpoint pens	961t-CO_2
Mechanical pencils	515t- CO_2
Marker pens	787 t- CO_2
Correction products	331t- CO_2
Total	2,594t- CO_2

Paper Product	Reduction of CO2 emission		Reduction of wood resources consumption	Reduction of wastes
	Non biomass origin	Biomass origin		
Notebooks	-1,831 t-CO2 (increase)	17,512 t-CO2	12,897	229t

Eco Mark: SWOT Analysis

- Strengths
  - Incorporates life cycle assessment (LCA)
- Weaknesses
  - Low level of awareness
- Opportunities
  - Green procurement
- Threats
  - Low interest among distributors

Green Mark: Background

Introduced	1992
Overseeing Body	Environment and Development Foundation
Product Categories	41
Products Awarded Label	451
Assessment	Environmental Benefits

Green Mark: Environmental Benefits Attributed to Green Mark Products, 2005

- ☐ Research Method:
  - ■ Collect data from manufacturers
  - ■ Use data to calculate the total accumulated environmental benefits
- ☐ Findings:
  - ■ Green Mark has significant environmental benefits

Green Mark: Environmental Benefits Attributed to Green Mark Products, 2005

Product Category	No. of Accumulated Logo Usage	Environmental Benefits
Office use papers from recycled paper	7,972,494 (box)	3.98 million trees saved
Toilet papers from 100% recycled paper	12,384,725	74,000 trees saved
Recycled and refilled toner cartridges for printer	550,514	550 tonnes plastic saved

Green Mark: SWOT Analysis

- Strengths
  - Established a measurement system
  - Incorporate life cycle assessment (LCA)
- Weaknesses
  - Relatively low visibility among consumers
- Opportunities
  - Improve relationship with the manufacturing sector
- Threats
  - Taiwan EPA hopes to decrease its control and funding

Factors that Influenced the Effectiveness of the Labeling Scheme

- ☐ Comprehensiveness of the label
- ☐ Level of stakeholder involvement
- ☐ Awareness of program
- ☐ Willingness to learn from assessment

Questions

Appendix

Eco Mark: Market Share Survey of Eco Mark Certified Products, 2005

□ Research Method:

- Interviewed companies that have certified products

- Hired a specialist survey company to make estimates

□ Findings:

- Largest market share of eco mark certified products is in printing ink

Eco Mark: Estimated Market Size and Market Share of Eco Mark Products

Tile- Block

Ceramic Tile	90,663 million yen	8.3%
Interlocking Block	32,211 million yen	8.7%
Concrete Block	116,019 million yen	0.1%

Wooden Board

Hard Board	5,313 million yen	24.2%
Medium Density Fiber Board	36,794 million yen	61.4%
Insulation Board	10,637 million yen	73.8%
Particle Board	54,100 million yen	55.0%

Eco Mark: Estimated Market Size and Market Share of Eco Mark Products

Printing Ink

	Estimated market size (volume shipped from manufactures)	Estimated share of Eco Mark certified products (on sales amount basis)
Offset lithographic ink	108,060 million yen	86.8%
News ink	31,380 million yen	98.2%
Gravure ink	67,810 million yen	15.9%
Resin typographic ink	19,480 million yen	2.5%
Other inks	74,800 million yen	2.5%

Eco Mark: Estimated Market Share per Sales Channel

	Sales for Entities	Sales for Consumers
Offset Lithographic Ink	99.9%	0.1%
News Ink	100%	0%
Gravure Ink	100%	0%
Resin Typographic Ink	100%	0%
Other Inks	100%	0%
Ceramic Tile	98.6%	1.4%
Interlocking Block	97.8%	2.2%
Concrete Block	100%	0%
Hard Board	100%	0%
Medium Density Fiber Board	100%	0%
Insulation Board	100%	0%
Particle Board	99.9%	0.1%

Eco Mark: Survey of Market Share of Eco Mark Certified Stationery Products, 2002

- □ Research Method:
  - ■ Interviewed certified corporations or distributors of the product in question
  - ■ Hired a specialist survey company to make estimates
- □ Findings:
  - ■ Estimated market size for all product categories other than the correction products category exceeded 10 billion yen

Eco Mark: Estimated Market Size and Estimated Share by Yen Amount of Eco Mark Certified Products

	Estimated Market Size in FY2001	Estimated Eco Mark Certified Product Sales Amount	Sales of Eco Mark Certified Products Over the Previous Year
Ballpoint Pens	43.036 billion yen	8.7	246.1
Mechanical Pencils	15.731 billion yen	11.0	669.5
Marker Pens	27.973 billion yen	19.5	310.5
Correction Products	8.521 billion yen	24.2	184.4
Notebooks	35.988 billion yen	22.3	96.9

Environmental Benefits: EU Flower

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Environmental Benefits: Blue Angel and Nordic Swan

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